



A. ANDAL DIESEL SHED:

I Brief History

1. Year of establishment :1981
2. Road No./Type of the first loco homed in shed : WDS_5
3. Details of any heritage locos in shed on pedestal or otherwise : Nil
4. ISO certification year
5. 9001-NA
6. 14001-NA
7. 18001-NA
8. Type wise holding as on 01.06.2010:

   WDG2/3 : 59

   WDM2/3 : 47

   WDS6R : 18

9. Maximum holding (Year/No. of locos) : 2010/124
10. Present loco link:-
    The shed is maintaining a passenger link of 9 locomotives. WDM2 locos are generally being offered for MU operation in goods services. While WDG2/3 locos are offered single for goods services. The shed is running 22 WDG3 and 9 WDM3 locos in 30 days schedule periodicity.

    Andal based locos are generally working through UDL-SNT and UDL-JTL section of ER to NFR, ECR, NCR, NR and NWR circuit.

11. Homing Capacity : 100 locomotives

12. Augmentation Plans : One work extension of Andal Diesel Shed for homing of 120 diesel locomotives has been sanctioned in PB 2009-10. Another work for infrastructural augmentation work to facilitate maintenance required on account of increase loco holding has been proposed in 2010-11.

    One DEMU rake has been received proposed to be operated in UDL-SNT section.

13. Other History (Not more than 4 lines)

II VITAL STATISTICS

1. Sanctioned Strength : 782
2. On Roll Strength : 707
3. No. of officers : 06
4. No. of supervisors : 58

5. Total Area : 87150 Sq.mtr.
6. Covered Area : 11180 Sq.Mtr.
7. %age of staff housed in Railway Quarters : 44%
8. Power Consumption : 60833 KWH./Month (avg.)
9. Water Consumption : 153750 Lts/day
10. Educational profile of staff : Data not available.
11. Age profile of staff :

<30 yrs.	30-40 yrs	41-50 yrs	51-55 yrs.	56-60 yrs.	TOTAL
34	80	242	200	151	707

12. MPR as circulated by E&R Dte.:- (Shed statistics) 5.70

III Performance parameters(2009-10)

SFC:- Coaching : 5.13 Goods : 1.61

LOC : 1.72

Shed consumption of Fuel : 41739 lts. (2009-10)

Kms. Earned by shed locos/month : WDM2-1032203, WDS6-188785.

IV Any important innovation:

a. Modified Cylinder Head cleaning Tank.

A Cylinder Head cleaning tank fitted with a thermostat to maintain the temperature in between 80^{O}C.to 90^{O}C has been fabricated and commissioned for better cleaning of both external and internal side of Cylinder head. Proper utilization of this gadget will ensure better cleaning of Cylinder head as well as reliability of the components.

b. Introduction of Cylinder head spring pairing gadget

A gadget for pairing of cylinder head spring fabricated in house where springs are tested under load of 118lbs(53.6 kg). Springs are required to be grouped in a way so that variation between two springs of same cylinder head is not more than 1.6mm under load condition.

c. Visual display of measurements of parts in FIP support to aid the workmen

FIP support is a critical assembly of Diesel Locomotive. During maintenance so many dimensions like clearances and interference are required to be measured.

To help and aid the workman in taking these measurements one chart displaying visually the parts has been put in the section.

This will help in proper measurement without any strain to workman and thus ensure the correct maintenance practice, which will help in reducing failures of FIP support.

d. Introduction of 'T' Jumper Augmented Test stand

Earlier T-jumpers were being tested for correct height using the test stand.

This test stand however did not ensure correct alignment of Benzo bolt bore with 2 bore for 3/8" size screw. To ensure this one augmented Test stand has been fabricated. There is also provision for checking straightness of stem with the base.

e. Introduction of an apparatus for fitment and removal of Small bearings

An apparatus has been introduced for fitment and removal of bearings fitted in small motors and Tacho Generator by hydraulic system. The apparatus has been fixed parallel to eye level of the artisan for ease in operation and accuracy.
Utilization of this device will result in proper alignment of bearing during fitment in Armature shaft as the workman can see the alignment directly. This is likely to avoid any failures on account of bearing of small motors / Tacho generator.

f. Visual display for guide to fit PTFE seal in Gear case

There have been failures due to smoke coming out of Gear case. Investigation revealed that these were due to improper fitment of PTFE seals. The workmen were not checking the groove of Gear case as well as the thickness of PTFE seal. Also there is very little difference in radii of PTFE seal for wheel and motor end for TM 4906 TM gear case and that of for PTFE seal of wheel end for TM 4907 gear case. Visual display boards have been put up for education to Workmen.

g. Visual display for fitment of Fuel T jumper.

In order to guide staff for proper procedure to be adopted for fitment of fuel T-Jumper i.e. the testing of T jumper and tightening sequence, display has been made for staff. This will help in spreading the awareness about the sensitivity of the assembly.

h. Gear case groove width and PTFE seal checking arrangement made.

PTFE seal is fitted inside the grooves of gear cases of Traction motors. It has been experienced that during service grooves of gear case get damaged and workmen, unaware of that, try to fit PTFE seal by hammering resulting into improper fitment. Improper fitment can also result because of PTFE seal thickness is not standard. These all result into smoke coming out from TM gear case. To avoid all this checking gadgets has been made to check the groove width of gear case and if required to rectify as well as thickness of PTFE seals. Apart from above the radii of PTFE seals of gear cases of TM 4906 and smaller one of TM 4907 are very close, which may sometime become cause of mistake. To avoid this, gadget also has provision of checking radius before fitment to avoid wrong fitment.

i. Introduction of Lubrication arrangement for FIP Support

FIP support rollers are always in contact into camshaft lobe hence continuous lubrication is required for smooth operation. FIP rollers are fed lube oil through passages in the FIP body, however it is utmost important to see that passages are clean. For this purpose a gadget has been made where oil is pumped through the inlet to see that passages are clear and oil oozes out from drain holes at cross head, fulcrum and rollers. This also ensures pre-lubrication before fitment in to the locomotives. This is likely to help reduce problem of wearing out of cam lobes and FIP rollers.

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k. Introduction of compressor oil seal pusher

A gadget has been fabricated in house for fitment of oil seal in compressor. By the use of this gadget, oil seal can be fitted in oil seal housing of compressor applying uniform pressure and also enable accurate fitment.
This gadget will help in reducing the chances of damage in oil seal during fitment and also reduce problems related to oil seal.